



# **Performance Audit of King County's Investment in Information Technology**

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**September 11, 2012**

**Report No. 2012-02**

## **Executive Summary**

Our review identified opportunities for the King County to build on recent progress toward a strategic, countywide focus for information technology (IT) project investment. Though some processes are in place to ensure that the County selects IT projects strategically, developing a more rigorous approach and increasing fidelity to established processes will leverage the strategic alignment of the County's IT project spending and provide decision-makers with the information necessary to make informed funding choices.



# King County

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## MEMORANDUM

**DATE:** September 11, 2012

**TO:** Metropolitan King County Councilmembers

**FROM:** Cheryle A. Broom, <sup>CB</sup>County Auditor

**SUBJECT:** Performance Audit of King County's Investment in Information Technology

Attached for your review is the performance audit report evaluating King County's investment in information technology. The primary objectives of the audit were to evaluate the extent to which the County optimizes technology resources and leverages results, which are transparent, accountable, and aligned with best practices.

The County Executive has recently begun a number of performance-related initiatives such as the line of business pilots, and KCIT's consolidation and its transition to a service-based budgeting system. These efforts and the recommendations made in this audit provide significant opportunities for the County to ensure a more rigorous and strategic countywide focus for IT project investment that drives IT results. We made 13 recommendations; the Executive concurred with seven and partially concurred with six. In addition, the Executive submitted further materials with his response which are available.

Because implementing all of our recommendations is important to improve the results of the County's IT investment, we provide additional comments on pages 43-45. Resolution to our recommendations may not be reflected in 2013 budget submittals to Council.

The Auditor's Office appreciates the cooperation received from PSB and KCIT management and staff in conducting the audit.

CB:yr



## Performance Audit of King County's Investment in Information Technology

### Report Highlights

September 11, 2012

Report No. 2012-02

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#### Purpose

King County makes a significant investment in technology—\$277 million in total active information technology (IT) projects this year. This report describes the extent to which the County optimizes technology spending to leverage results with transparency, accountability, and alignment with best practices.

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#### Key Audit Findings

Recent actions show measurable progress; however, further improvements are needed in King County's approach to IT investment as many current plans and practices could benefit from additional rigor and strategic focus. For example, the County recently consolidated its IT structure and transitioned to a service-based budgeting model, potentially improving transparency. However, in many cases we found that informal methods of IT project selection; significant schedule extensions; undefined business benefits; and unmitigated risks still hamper optimum IT investment. Further, we identified deficiencies in information provided to County Council as they are making project funding decisions. For example, IT project documents are often incomplete and contain unreliable data. Finally, we found that the County does not know if completed projects realized intended benefits. However, the County recently applied greater focus on benefits realization planning and our report provides recommendations supporting this effort.

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#### What We Recommend

Our recommendations are provided both to encourage improved performance and accelerate the achievement of actions already in progress. As is often the case, implementing improvements may require time and resources. A coordinated effort between PSB and KCIT will transition the County from an incomplete approach to investing in IT to ensuring that technology spending provides benefit to the County and the taxpayers. We have recommendations in three areas:

1. A framework to ensure strategic and transparent IT investment governance and independent oversight;
  2. Rigorous, complete, and transparent IT project selection; and
  3. Effective systems to collect and analyze project information with a strong focus on ensuring realization of project benefits.
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# Table of Contents

IT Investment Maturity, Strategy, and Governance .....	I
Strategically Selecting IT Projects .....	9
Evaluating the IT Investment .....	19
Total County IT Investment.....	26
Conclusion .....	31

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## Appendices

Appendix 1: A Framework for Assessing and Improving Process Maturity .....	32
Appendix 2: Code Requirements for IT Governance Bodies .....	33
Executive Response.....	35
Auditor's Comments on Executive's Response .....	43
Statement of Compliance, Scope, Objectives & Methodology.....	46
List of Recommendations & Implementation Schedule.....	47

# IT Investment Maturity, Strategy, and Governance

## Section Summary

There are opportunities for the County to build on recent progress toward a strategic, countywide focus for IT project investment. **Information technology leverages the achievement of the County's business goals through investment in technology-related projects.** The County has recently taken positive steps in achieving an overall improved IT project investment. However, existing weaknesses in the County's approach to its IT project investment contribute to gaps in achievement of business benefits, schedule adherence, and risk mitigation. Recognizing that there are plans in progress, the County has not yet established a comprehensive structure or accountability framework, including a firm partnership between county processes related to technology and business. Steps to improve IT governance could build on recent efforts to further leverage alignment with the County's strategic technology objectives and improve the transparency and accountability of King County Information Technology (KCIT) led projects.

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## County Building Toward a Countywide Strategic Focus

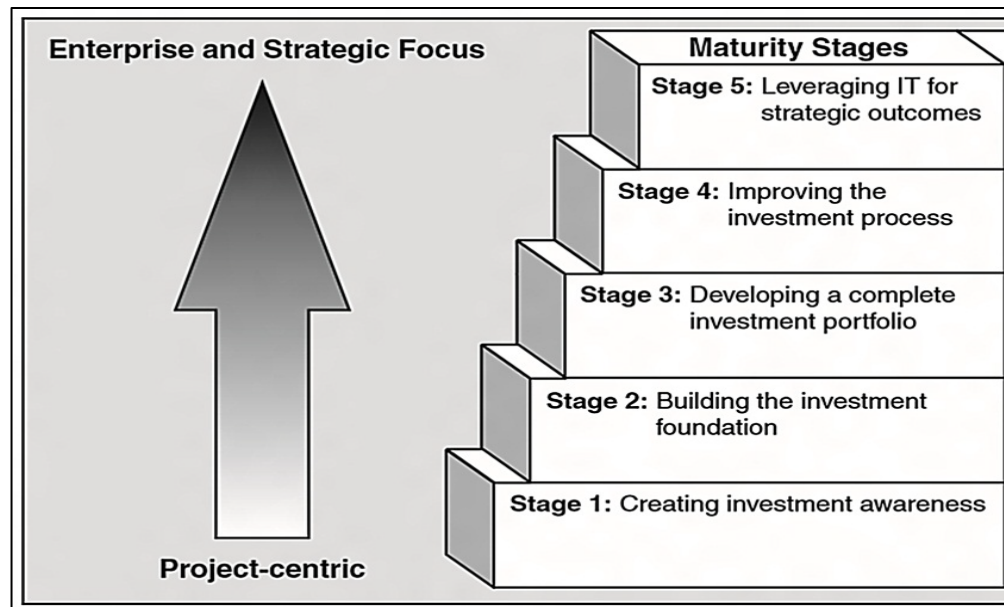
Based on our assessment of the County's IT investment management maturity shown in Exhibit A, we found the County is moving toward the second stage—building the investment foundation.<sup>1</sup> It is important to note that each stage encompasses a large body of work and that one stage must be fully completed before moving on to the next. The county is initiating higher-level critical processes, especially related to project control and many positive practices are already in place including initiation of some activities in stages two and three. For example, IT governance (described more fully below) is in place and the County has a process to develop business cases for projects that identify the sponsor, customers, and business needs of each project. See Appendix 1 for a more detailed description of the maturity stages.

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<sup>1</sup>We conducted our assessment based on the model in U.S. Government Accountability Office. *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, March 2004.

# IT Investment Maturity, Strategy, and Governance

**Exhibit A:**  
The Five Stages of  
Maturity Within  
Information  
Technology  
Investment  
Management

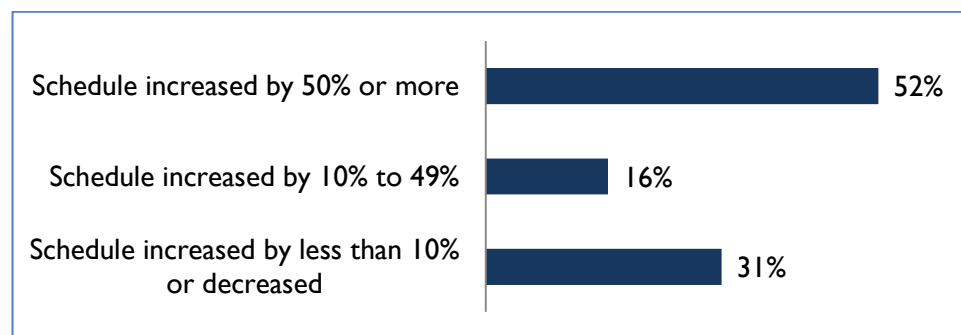


Source: Modified from GAO

According to the U.S. Government Accountability Office (GAO) model, there are key indicators of opportunities to further develop IT investment processes. We found evidence of these indicators at King County and will elaborate on each issue in the remainder of our report.

The need for further improvement in the project investment process in King County is evidenced by frequent slippages in schedule, low-value or unproven/undefined business benefits, unmitigated risks, and increases in initial IT project cost estimates. Our evaluation of the results of county investment processes considered projects initiated in the past. Since practices are evolving it is unclear what the results of current practices will be. An example of one impact is shown in Exhibit B below. Schedule increased by more than 50 percent in more than half the projects we reviewed.

**Exhibit B:**  
In Half of Projects,  
Schedule Increased  
by 50 Percent or  
More



Source: King County Auditor's Office analysis of project schedule data from KCIT's Master Project Lists, 2002 to 2011

# IT Investment Maturity, Strategy, and Governance

In our analysis comparing initial and final schedule estimates for 172 IT projects, we found that for nearly 70 percent (118 projects), the project schedule increased by more than 10 percent.<sup>2</sup> Additionally, the schedule for 61 projects (35 percent) more than doubled. KCIT gathered and analyzed similar data in 2010.

This report contains a number of recommendations to build on work in progress to enhance the County's IT strategic focus. The purpose is not only to improve the County's investment maturity but also to enhance IT project performance. King County can more effectively evaluate and select IT projects and, in doing so, fund projects with more transparent cost and schedule estimates, which are more likely to succeed and result in benefits to both the County and its citizens.

## **The County Could Apply a Comprehensive Strategic Investment Framework to IT Decision- Making**

A key building block of IT investment management is development of a strategic investment framework. The County's enhancement of the existing building blocks of such a framework would facilitate building an IT project portfolio that provides the most value toward achieving the County's strategic objectives. Some initial elements are in place. For example, current forms provide an opportunity for projects to show how they align with strategic plans. However, we found that while KCIT plans and reports explained to some degree how projects fit into the KCIT strategic plan, and in some cases the King County strategic plan, it was unclear to what extent these strategic plans were used to determine which projects the County should pursue.

As the GAO's IT investment management model makes clear, to move from a project-centric to an enterprise or strategic focus, it is essential that an organization accomplish several elements of a strategic investment framework. KCIT and Office of Performance, Strategy, and Budget (PSB) staff noted that they lacked a structured decision-making framework that was applied to the selection of an IT project portfolio. They also acknowledged that there are opportunities to better define roles and responsibilities and that there is no set of project selection criteria to evaluate potential projects either during the conceptual review process or when projects are considered for inclusion into the annual budget. In addition, although project performance metrics are being developed and implemented, a balanced approach to both project and portfolio performance objectives, metrics, targets, and benchmarks would add rigor to monitoring the success of IT project

<sup>2</sup>To conduct this analysis, our office identified a total of 253 IT projects King County has undertaken since 2002 from the annual Master Project List compiled by the Project Review Board. We eliminated from our analysis those projects that did not include a definitive estimate (listing TBD as the end date) and those projects with only a single schedule estimate.

## IT Investment Maturity, Strategy, and Governance

investments. Finally, there should be alignment with the countywide strategic plan in the way IT projects will be selected and anticipated to add value to the County.

KCIT is in the process of implementing an enterprise architecture program which could address some of these issues. For example, in 2012, for the first time, the Enterprise Architecture Leadership Team reviewed proposed projects to determine if they conformed to enterprise architecture principles. These principles include minimizing the number of technologies used and ensuring interoperability between proposed and existing systems. This is a positive first step in developing comprehensive guidance for portfolio selection.

Clear guidance for allocating resources and ensuring intended impact can help leverage return on the County's IT project investment and improve organizational performance. This process of developing a strategic investment framework would begin with increased depth of understanding what constitutes value for the County and documenting this understanding as part of the technology strategic planning process in KCIT.

Overall, we found that while the County is building toward a countywide strategic focus for IT investment, it lacks a strategic investment framework for selecting and evaluating projects. The County can continue to make progress improving its investment maturity by communicating and applying a strategic framework for IT decision-making and improving IT governance and oversight. These improvements can enhance the quality of projects the County selects and the likelihood executed projects will result in benefits supporting the strategic goals of the County.

We discuss the application of strategic investment framework elements in the next section of our report.



# IT Investment Maturity, Strategy, and Governance

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## Recommendation I

The Office of Performance Strategy and Budget (PSB), in consultation with King County Information Technology (KCIT), should further develop a strategic investment framework for formal approval by stakeholders, including the King County Council. PSB and KCIT should then clearly communicate and apply the framework. The strategic investment framework should include:

- a) Roles and responsibilities for guiding resource allocation and ensuring intended results and modified business processes.
- b) Definition and communication of investment types, categories, criteria and relative weightings to the criteria to allow value decisions among projects.
- c) Clear requirements for stage completion and other reviews.
- d) Definition of a balanced set of project and portfolio performance objectives, metrics, targets, and benchmarks.
- e) Alignment with the countywide strategic plan and its goals for delivering value.

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## Additional Efforts Needed to Build on Positive Steps in County's IT Governance

King County has made progress in its IT governance practices. There are two areas where we identified opportunities to further leverage success:

- Focus on strategic technology objectives
- Project Review Board (PRB) transparency and independent oversight of KCIT projects

### **IT governance has advanced, but could increase focus on shaping and ensuring alignment with the County's strategic technology objectives**

IT governance is a concept that describes the groups that ensure that the County aligns its IT strategy with business strategy. In King County, the Strategic Advisory Council (SAC), Business Management Council (BMC), Technology Management Board (TMB), and Project Review Board (PRB) are the governance leadership bodies that ensure that the strategies and objectives developed as part of the work identified in the first part of this section are sustained and extended. Roles and responsibilities for governance bodies are set forth in King County Code. If the County believes that current code language does not further effective IT governance it may wish to propose revisions to the code. See Appendix 2 for detailed code requirements.

# IT Investment Maturity, Strategy, and Governance

KCIT has made efforts to ensure that IT governance is collaborative and reflects a partnership between KCIT and agencies.<sup>3</sup> However, county governance groups could maximize their contribution to the County's strategic IT project investment by more actively shaping strategic direction and confirming that IT investment conforms to approved strategy. In addition, there are opportunities to more fully meet codified responsibilities.<sup>4</sup> Exhibit C shows the framework of King County's IT governance, not including PRB which is addressed in the next section.

**Exhibit C:**  
**King County IT**  
**Governance**

Body	Purpose	Members	Chair
SAC	Advises County Executive in developing long-term strategic objectives and planning and implementing for information technology deployment countywide	Council and Elected Leaders, external advisors	Executive
TMB	Advises Chief Information Officer (CIO) on technical issues including policies and standards for information security, applications, infrastructure and data management	Agency information technology managers	CIO
BMC	Advises CIO in carrying out duties related to developing short-term, mid-term and strategic objectives for information technology countywide, recommending information technology proposals for funding and developing standards, policies and guidelines for implementation	Agency deputy directors or business managers	CIO

Source: KCAO, adapted from KCIT documents

The SAC, TMB, and BMC have focused on many important issues; however, there has been a lack of focus on shaping and ensuring alignment with the County's strategic technology objectives. For example, the SAC reviews and approves the Strategic Technology Plan; however, the timing of their review has led to a recommend/do-not-recommend decision rather than allowing for the level of input that might evaluate projects against their recommended county strategic objectives as is their role outlined in code: *"Develop and recommend strategic objectives for information technology deployment countywide; Review information*

<sup>3</sup>In this report, to improve clarity, when we use the term "agency" we are referring both to executive departments and to offices led by separately elected officials. Offices of the separately elected in King County include the King County Council, Assessor, District and Superior Courts, Elections, Prosecutor, and Sheriff.

<sup>4</sup>The SAC, TMB, and BMC were established by Ordinance 14155 in 2001. The establishment of these bodies followed the identification of countywide IT governance weaknesses in a 1999 audit by the King County Auditor's Office, *Information Technology Planning, Development, and Implementation Processes*, and the findings of the subsequent 2000 King County Technology Peer Review Panel. See details of Ordinance 14155 in Appendix 2.

# IT Investment Maturity, Strategy, and Governance

*technology proposals for their alignment with adopted strategic objectives.”<sup>5</sup>* In a second example, although the members of the BMC propose projects originating from their own agencies, there is no evidence that they substantively review all proposed projects for strategic value and risk as code indicates is their role: *“Assess short-term, mid-term strategic value and risk of information technology proposals.”<sup>6</sup>*

When governance bodies do not fully contribute in strategic roles, there is the risk that input into strategic decisions is insufficiently broad in key governance responsibilities such as resource optimization and risk mitigation. This can result, for example, in a disjointed IT investment portfolio that will not produce desired IT outcomes.

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## Recommendation 2

King County Information Technology (KCIT) should increase and document Strategic Advisory Committee, Business Management Council, and Technology Management Board focus on shaping and confirming compliance with King County’s technology strategies and objectives in general and for the full technology portfolio as is required by code.

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### **PRB restructuring has increased efficiency, constructive approaches, and streamlined the funding release processes; however, more can be done to increase transparency and reduce risk related to independent oversight of KCIT-led projects**

The PRB acts in an advisory role to the Chief Information Officer (CIO) and helps to maximize return on IT project investments by overseeing individual projects. See Appendix 2 for specific code requirements. The last formal meeting of the PRB was December 2010. Following that meeting, the PRB process was revised in an effort to streamline processes and improve the effectiveness of oversight. The new process eliminated formal PRB meetings that included the CIO and other stakeholders. It also allowed for approval of funding releases by the CIO on behalf of the full PRB. In addition, KCIT indicated that they are initiating a risk-based approach to project oversight. This is a positive step.

Many stakeholders, especially project managers, report that the funding release process has improved, specifically, that it is more streamlined and efficient. Despite improvements, the streamlined approach has resulted in

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<sup>5</sup>KCC 2.16.07582 Strategic advisory council.

<sup>6</sup>KCC 2.16.07583 Business management council.

# IT Investment Maturity, Strategy, and Governance

increased risks related to oversight of KCIT-led projects and transparency for stakeholders as described below.

For example, there is a risk when overseeing their own projects, KCIT may not be fully independent to identify when those projects are not performing as intended and to take appropriate action. Nearly a third of active IT projects in 2012 are managed by KCIT and, with the recent countywide IT reorganization, it is likely even more IT projects will be assigned to KCIT project managers. The CIO and KCIT staff have expressed their support that mitigation of risk on such projects could include external quality assurance consultants, involvement of members of the PRB that do not typically have an active role in the new process, or other checks and balances.

PRB stakeholder engagement has been reduced, in large part because there are no formal meetings to attend and, although process documents are available on a recently improved SharePoint site in response to a council proviso, they are not regularly disseminated to stakeholders. Key stakeholders have noted that the current process lacks discipline and that some issues may be falling through the cracks. For example, one PRB member noted that the failure to circulate project information resulted in the Sheriff's Office IRIS/TESS project almost missing a deadline for a federal grant. Fortunately, this issue was raised by the PSB staff and steps were taken to ensure the federal grant was utilized.

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## **Recommendation 3**

King County Information Technology (KCIT), in its role as the Project Review Board (PRB), should:

- a) Develop and implement a methodology for ensuring independent oversight of KCIT-led projects; and
  - b) Develop and implement a plan to increase stakeholder involvement and PRB transparency.
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# Strategically Selecting IT Projects

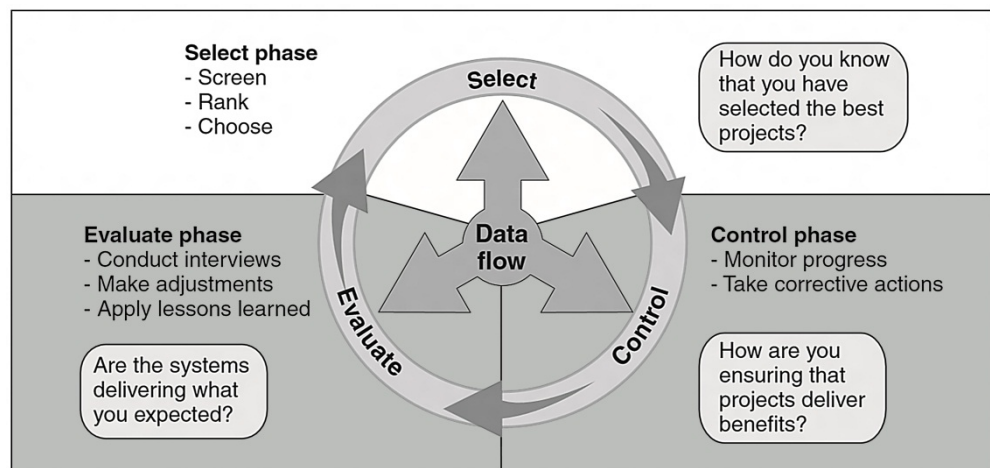
## Section Summary

PSB acknowledges that their process for evaluating IT projects lacks clear, documented, and comprehensive criteria. County Council receives incomplete, unclear, and unreliable data when making funding decisions for IT projects. Developing a more rigorous approach to project selection and increasing fidelity to established processes will leverage the impact of the County's IT project spending. In addition, these actions will help provide decision-makers with the information necessary to make informed funding choices. When Council receives IT project information for funding decisions, business cases and cost-benefit analysis spreadsheets often present incomplete, unclear, and/or unreliable data.

### Selection of IT Projects Could Improve

This report section focuses on the “Select” phase in the graphic below that shows how effective IT project portfolio selection leverages the strategic outcomes of IT. This builds on the discussion of creating an investment structure in the last section.

#### Exhibit D: Fundamental Phases of the IT Investment Approach (Select Phase)



Source: Modified from GAO

King County pursues IT projects for a number of reasons, including providing new features or functionality, or replacing/extending the life of existing technology to support county business. For the most part, agencies identify the need for and purpose of potential IT projects. In some cases, the County will pursue IT projects affecting several or all agencies. These enterprise projects, like the countywide telephone replacement, are typically proposed and managed by KCIT.

This section includes two distinct steps that the County takes within the Select phase: first, applying a strategic investment framework such as the one discussed in the IT Investment Maturity, Strategy, and Governance section of this report and second, providing information supporting decision-making to the King County Council.

# Strategically Selecting IT Projects

## **The County's Method of Selecting a Project Portfolio Is Largely Informal**

The County lacks two important elements for clear, consistent, and transparent evaluation and selection of a project portfolio:

- Clearly documented criteria for successful completion of conceptual review
- Clearly documented and reported criteria for prioritizing and selecting projects for funding

### **PSB does not apply criteria to evaluate projects at conceptual review**

Conceptual review is held in the spring and is the first of two main points in which the Office of Performance, Strategy and Budget (PSB) reviews IT project proposals from agencies. PSB also reviews projects again as part of the budget approval process before submitting these projects to the King County Council. For conceptual review, agencies typically provide an initial business case and summary cost/benefit analysis describing the problem the IT project proposes to solve and some of the estimated costs and benefits associated with the proposed solution. During the conceptual review process, the CIO can, and frequently does, provide conditions on IT projects as part of the approval process.

As mentioned previously, in 2012 the KCIT-led Enterprise Architecture Leadership Team conducted its first review to determine the extent to which proposed projects conformed to documented enterprise architecture principles. PSB notes that they review the information submitted and conduct a reality check of the proposed project to ensure it is not unreasonable. However, they do not apply a specific set of criteria to evaluate potential projects to determine which projects merit additional time and resources to refine the business plan and cost/benefit analysis and which should not be forwarded to County Council for funding request.

PSB cannot fully and consistently evaluate potential IT projects during the conceptual review process without consistent and transparent criteria. By neglecting to apply criteria, PSB limits its ability to consistently evaluate projects based on each project's feasibility, cost-effectiveness, return on investment, or any other factor identified in a strategic investment framework. In addition, agencies do not have the information they need to prepare the documents required for conceptual review or meaningful expectations for how PSB will evaluate the projects.

### **PSB does not yet utilize a system to evaluate, rank, and prioritize projects against one another at budget submittal review**

PSB staff indicated that they do not have a system to score, rank, or prioritize IT project proposals agencies submit for inclusion in the budget

# Strategically Selecting IT Projects

submittal to Council. Instead, PSB staff classify projects in broad tiers, based on staff's determination as to how important the project is. IT best practices recommend that "after each project's cost, risk, and benefit information has been examined and validated, all of the projects should be compared against some common decision criteria in order to weigh the relative merits of the projects and develop a prioritized listing of projects."<sup>7</sup>

Without employing a consistent and transparent scoring model to rank and inform funding decisions on IT projects, King County cannot be assured it is funding projects that will best support its mission needs. While exceptions to such a model may be necessary in situations where a project must be implemented to replace obsolete equipment or to mitigate a security risk, in general, the model should be used to determine which projects to pursue. Both the criteria used during conceptual review and the scoring model used for funding decisions, should be linked to a strategic investment framework (discussed earlier in this report) to ensure that the project portfolio selected provides maximum value in achieving the County's strategic objectives. Given the limited resources at the County's disposal decision-makers should have sufficient assurance that IT project investment are the most effective in terms of accomplishing the County's priorities.

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## Recommendation 4

The Office of Performance Strategy and Budget (PSB) should utilize a set of consistent and transparent criteria and a scoring system to evaluate potential projects at conceptual review. This criteria and scoring system should be linked to the strategic investment framework. Additionally, PSB should employ a system to score, rank, and prioritize projects within a funding category for inclusion in the budget.

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## Project Information Provided to Council Should Be Complete and Clear

We found, and PSB acknowledges, that information provided to County Council is weak in three areas:

- Business cases
- Cost/benefit worksheets
- Characterization of estimated project benefits

Project estimates change over time because of the three weaknesses noted above, as well as inevitable changes in technology between planning and implementation and enhanced precision in information as projects move

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<sup>7</sup>Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making (GAO/AIMD-10.1.13, February 1997).



## Strategically Selecting IT Projects

toward delivery. Because of these changes, revaluation of IT projects is important since past funding decisions could have been made based on incomplete or preliminary data.

### **Business cases provided to County Council at the time of funding requests did not provide sufficient information for Council to make informed budget decisions**

According to IT best practices, IT business cases should include the five elements in Exhibit E (below) to realize business benefits and reduce the risk of unexpected delays, costs, and value erosion.

PSB provides agencies with business case templates and offers other support and guidance. In addition, in 2012 they began requesting that a benefits realization plan accompany project proposals. Despite this, PSB has not taken a strong role in ensuring that business cases included in budget submittals to Council reflect their guidance. PSB's collaborative approach to oversight has contributed to the presentation of business cases to Council for funding that do not meet standard practices or provide sufficient decision-making information.

Acknowledging the fact that early project analysis may be challenging due to unknowns at the time of budget requests, the information provided to Council should be the best available at the time it is submitted. It should also include disclosure to decision-makers regarding the level of confidence in the information and a date to revisit project information as project details become clearer.

We reviewed the business cases for ten projects that represented a mix of KCIT-led and agency-led projects that were approved by Council between 2006 and 2011.<sup>8</sup> We found that the information provided to Council was not comprehensive enough to facilitate informed decisions about technology project investment. For example, similar to many other business cases submitted to Council for funding, the 2007 Permit Integration business case was missing alternatives analysis, risk analysis, project metrics, and benefits realization plan.

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<sup>8</sup>We selected, in consultation with KCIT and PSB, 16 IT projects to conduct in-depth analysis at the beginning of our audit. Of those 16, we were able to obtain business cases for ten projects, as the remainder were too early in the approval process or did not have business cases because they were not defined as projects by KCIT.



# Strategically Selecting IT Projects

## Exhibit E: Business Cases Do Not Consistently Include Key Elements

Business Case Element	What questions does this information answer?	Business Cases with this element
Project Benefits Estimate	What will the County get for our investment?	70%
	Is this project more/less important to fund than any other?	
Alternatives Analysis	What other options were considered to resolve the business problem?	60%
	What are the costs and benefits of the selected approach?	
	Did project planners rigorously evaluate all the options?	
Risk Analysis	What are the risks of undertaking this project?	40%
	How likely is it that this project will cost more, take longer, or achieve fewer benefits than are asserted in the project proposal?	
Project Metrics	How will the County evaluate whether this project is performing?	20%
	What is the baseline performance at status quo?	
Benefit Realization Plan	Can the County be confident that achieving benefits will be a focus for project implementers?	0%
	Who is responsible for achieving benefits and reporting back on benefits achieved?	

Source: KCAO analysis of business plans

### Recommendation 5

The Office of Performance Strategy and Budget (PSB) should ensure that business cases are complete, clear, and contain the most accurate data available at the time of submittal. Business cases should state the level of confidence in the information presented and include a timeframe estimate when more complete information will be available as the project matures. In addition, PSB should ensure rigorous completion of the five elements of business cases noted above including ensuring that agencies fully state and explain the assumptions used in the business cases.

### Cost/benefit analysis provided to County Council at the time of funding requests did not provide sufficient information for Council to make informed budget decisions

Along with business cases, cost/benefit analysis (CBA) is an important tool that PSB uses to evaluate potential projects and is the source for much of the monetary cost and benefit information provided to Council and other decision-makers tasked with making project funding decisions.

## Strategically Selecting IT Projects

Despite the importance of this tool, we found a number of fundamental problems with the cost/benefit template.<sup>9</sup> For example, the current formulas in the worksheet miscalculate the net present value or the current value of future cash flows for projects and fail to account for the overall life cycle cost of a project over its useful life. Exhibit F summarizes the issues we identified and the impact of these issues:

**Exhibit F: CBA Template Does Not Accurately Represent Costs or Benefits**

Issue	Impact
Miscalculates net present value	Full costs and benefits not considered
Missing formulas and references	Inaccurate results of analysis
Truncated analysis	Full costs and benefits not considered
Future costs and benefits were inconsistently adjusted for inflation	Future costs and benefits underestimated

Source: KCAO analysis of PSB cost/benefit template

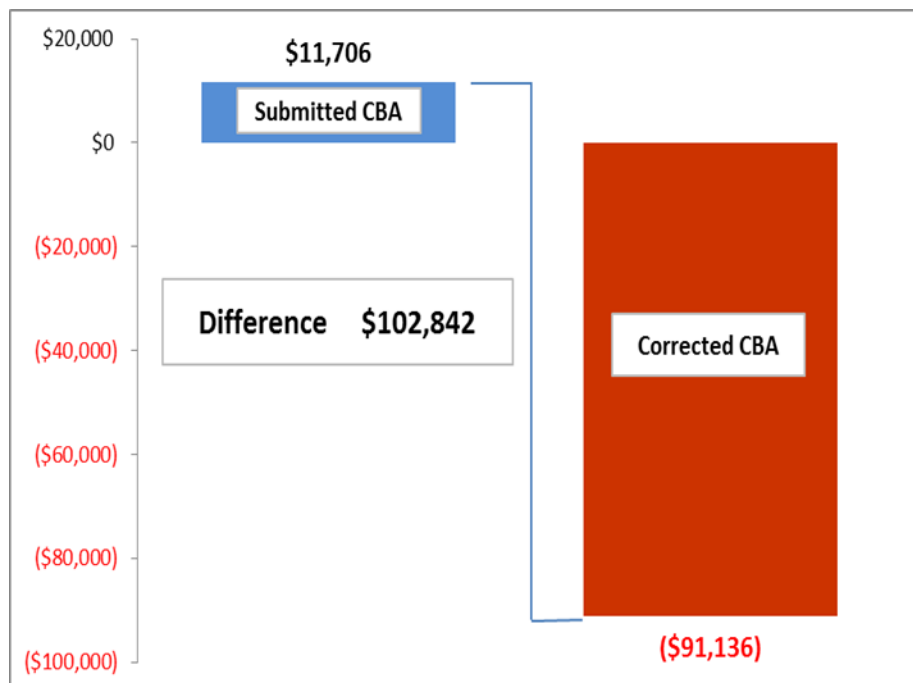
To determine the impact of the miscalculation of net present value, we selected one of the IT projects in our sample and corrected this calculation. When we compared our corrected figure with the net present value included in the cost/benefit analysis submitted to PSB, we found that the current value of that project went from positive to negative, meaning that the project is no longer expected to result in a net benefit during the period of analysis.<sup>10</sup> The results are summarized in Exhibit G below:

<sup>9</sup>KCIT and PSB created a cost/benefit template for agencies complete with estimates about the cost and benefits for an IT project. The template contains a number of embedded formulas which take the data entered and calculate a number of summary figures including net present value and expected break-even point.

<sup>10</sup>We took the data from the March 2012 cost/benefit worksheet for Public Health's Health Information Technology project and compared the net present value with data we calculated by plugging the cost and benefit estimates into a corrected worksheet.

# Strategically Selecting IT Projects

**Exhibit G: Corrected  
CBA Changes  
Project Value from  
Positive to Negative**



Source: KCAO analysis based on data from KCIT and PSB

Lastly, we found the instructions and guidance PSB provides to agencies to complete this template to be minimal. There is a single instruction sheet that focuses largely on the timing and rationale for the template as opposed to providing detailed instructions to agencies about how to accurately and consistently provide cost and benefit estimates. This lack of comprehensive instructions could contribute to the wide variety in quality we observed when reviewing completed cost/benefit worksheets.

These issues with the cost/benefit template call into question whether the cost and savings estimates provided to Council and other decision-makers represent the best estimates available and whether these estimates facilitate effective decision-making and oversight. The County implements IT projects to achieve a variety of benefits beyond quantifiable cost savings, such as risk mitigation or legal compliance with state or federal regulations. While the value of these benefits is often difficult to quantify, it is important to fully document the expected costs of achieving these benefits, and when possible, to quantify benefits. This type of cost and benefit information facilitates decision-making and comparison of potential projects by clearly showing the anticipated costs and benefits of projects regardless of the types of benefits expected.

# Strategically Selecting IT Projects

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## Recommendation 6

The Office of Performance Strategy and Budget (PSB) should update its template to correct the net present value calculation, correct missing formulas, consistently account for inflation, and account for full project life cycle in time for the 2013 conceptual review sessions. In addition, prior to submitting to County Council, PSB should ensure that the cost/benefit worksheet includes the most accurate data available at the time of submittal, including communication of the level of confidence in the information presented and an estimate of the timeframe when information will become more precise.

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### **Process needed to reevaluate projects when costs and benefits estimates change**

Once projects are approved by Council there is no formal opportunity for decision-makers to review new and updated information. With updated data, it would be useful to determine whether the project continues to meet county goals or should be modified, replaced, or eliminated. This is especially important because at the point that projects are funded, project information is preliminary and imprecise and we found that the business cases and cost/benefit worksheets were of inconsistent quality.

Additionally, the County lacks a formal process to determine whether it should continue funding and executing a project if the benefits (tangible or intangible) change as the project is implemented. If projects are funded without clear and precise estimates about costs and benefits, it is essential there be a mechanism to cancel those projects. When projects no longer provide sufficient value to the County based on updated cost/benefit information and data provided by the project, they should be subject to this review.

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## Recommendation 7

The Office of Performance Strategy and Budget (PSB) in consultation with King County Information Technology (KCIT) should develop a process to reevaluate information technology projects if project costs, benefits, or schedules change beyond estimated percentages. This process should include a schedule for reporting to the Council.

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### **Project benefits are not fully explained when tangible and semi-tangible benefits are reported interchangeably**

King County invests in IT projects to address specific goals; risk management, efficiency, accountability/transparency, and customer service/access. In many cases, the County initiates IT projects to realize benefits that can be monetarily quantified. These benefits can take a

## Strategically Selecting IT Projects

number of forms including increased revenues and reimbursements, cost reductions, or cost avoidances. The distinction between tangible and semi-tangible benefits is important. Tangible benefits can result in greater revenue for the County, which can be used for other priorities. Semi-tangible benefits may result in potential future cost avoidances which, while important, do not directly translate into additional available funding for the County.

The current structure of the cost/benefit analysis template combines these benefits in a single line on the summary page. Additionally, there are not clear instructions or examples provided to assist agencies in classifying benefits as tangible, semi-tangible, or other.

In order to assess the extent to which tangible and semi-tangible benefits are reported interchangeably, we conducted an analysis of the report on cost savings the County Executive submitted on February 1, 2012 and found that of the \$9.4 million of expected cost savings or revenue additions for 2012, 70 percent (\$6.6 million) were semi-tangible.<sup>11</sup> The results of this analysis are shown in Exhibit H below:

**Exhibit H: Tangible, Semi-Tangible Savings Estimates Reported Interchangeably**

Savings	2012 Savings Estimates (millions)		2012 – 2016 Total Savings Estimates (millions) <sup>12</sup>	
Semi-Tangible	\$6.6	70%	\$33.9	36%
Tangible	\$2.8	30%	\$59.3	64%
Total Savings	\$9.4		\$93.2	

Source: KCAO analysis of data in Executive's 2012 Cost Savings from IT Projects report

In some cases, a single project represents a large percentage of overall expected savings. For example, the I-Net modernization project<sup>13</sup> reports about \$4.5 million in expected savings in 2012 (almost 50 percent of the \$9.4 million in total estimated savings for 2012), all of which is semi-tangible savings. Additionally, based on a review of project documentation, these savings are cost avoidances associated with not

<sup>11</sup>The County Executive submitted this report in response to a proviso specifically calling for a report on cost savings as a result of technology investments. The report includes \$16 million in total savings/revenue additions for 2012. Of this, about \$4 million are ABT-related and PSB were unable to provide documentation necessary to determine whether about \$2.5 million of these savings were tangible or semi-tangible. Similarly, the report included about \$168 million in total savings for 2012 to 2016; of this, about \$55 million were related to ABT and \$19 million came from projects for which we did not have documentation to review.

<sup>12</sup>The proportion of total tangible versus semi-tangible savings is greater in the 2012 to 2016 time period compared to just 2012. This change is largely caused by three projects, Mainframe Migration, Hosted Cloud Computing, and Permit Integration which are estimated to save about \$40 million from 2012-2016, of which the vast majority is tangible savings. Because more than 75 percent of the expected savings of these projects are expected from 2014 to 2016, the overall effect is to switch the proportion of tangible and semi-tangible savings over this period.

<sup>13</sup>The King County Institutional Network (I-Net) is a communications network providing broadband network services to a significant number of constituents. It connects approximately 260 public facilities within King County, including schools, libraries, fire stations, etc.

## Strategically Selecting IT Projects

having to shut down this network and replace this service. While it is clearly to the County's benefit to maintain and improve the I-Net system, this is not a tangible savings to the County.

Tangible benefits provide the County with additional funds (either through increased revenue or cost reductions) it can apply to other priorities, while semi-tangible benefits do not. Without making this distinction, decision-makers are left with the impression that all benefits are equal, thus depriving them of information necessary to make effective and informed decisions about how to divide scarce resources between technology projects.

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**Recommendation 8**

The Office of Performance Strategy and Budget (PSB) should develop definitions to distinguish between the various types of savings from IT projects and consistently use these definitions in reports to County Council and other decision-makers. PSB should provide instructions and examples to illustrate the differences between these savings definitions which agencies can use when completing the cost/benefit analysis template.

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# Evaluating the IT Investment

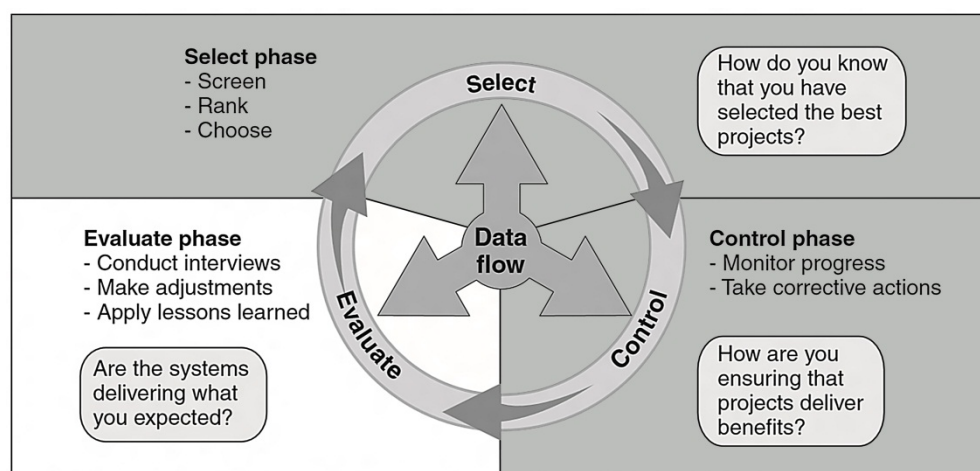
## Section Summary

The County needs to improve information and reporting about the outcomes of its investments and spending on IT projects including the expected benefits from those projects and lessons learned to improve processes for better future impact. We found several gaps in the County's evaluation of IT projects. First, IT project data (including historical schedule, cost, benefit and close-out documentation) is not available or, in many cases, is incomplete. This hinders the County's ability to make fully-informed decisions about both individual projects and future technology spending. Secondly, project benefits are neither sufficiently measured nor documented to allow for an evaluation of the extent to which projects result in planned benefits. Lastly, there is not a comprehensive system to collect and disseminate lessons learned from IT projects. As a result of these gaps, it is unclear to what extent IT project funding is wisely spent.

## Evaluation Critical Component of Strategic IT Investment

Evaluation is a critical component of strategically using IT resources. Evaluation allows an organization to continually improve processes to achieve their desired outcomes. This section focuses on the "Evaluate" phase in the graphic (first discussed in Strategically Selecting IT Projects section) that shows how evaluation leverages the strategic outcomes of IT.

### Exhibit I: Fundamental Phases of the IT Investment Approach (Evaluate Phase)



Source: Modified from GAO

## IT Decision-Making Hindered by Lack of Reliable Project Data

The County does not currently have sufficient and reliable information about IT project investments. In many cases, project data is either not comparable or does not exist; thus, it is very difficult to compare project information or understand trends. This is caused, in large part, by the lack of overall coordinated tracking and reporting of project information. There have been two primary difficulties with IT project data, lack of a central storage location and lack of definitive and accurate historical information.

## Evaluating the IT Investment

Data is the core of accounting for strategic IT project investment. Gaps in data prevent analysis of project performance such as assessing to what extent agencies realistically estimate the cost of IT projects when they are submitted to the King County Council for approval. The purpose of this critical data is to ensure that an organization provides effective oversight for its IT projects throughout all phases of the project life cycle, provides the opportunity to highlight lessons learned, and to support current and future investment decisions. In addition, awareness of past and current projects by staff and managers throughout the organization can help them to avoid duplication of effort and reconcile overlapping resources.

For example, review of adherence to estimated project budgets is a standard analysis of project performance. Because this historical analysis of the County's IT projects had never been conducted, we determined that we should conduct it as part of our audit work. The following description of our analytical process illustrates the gaps in project data:

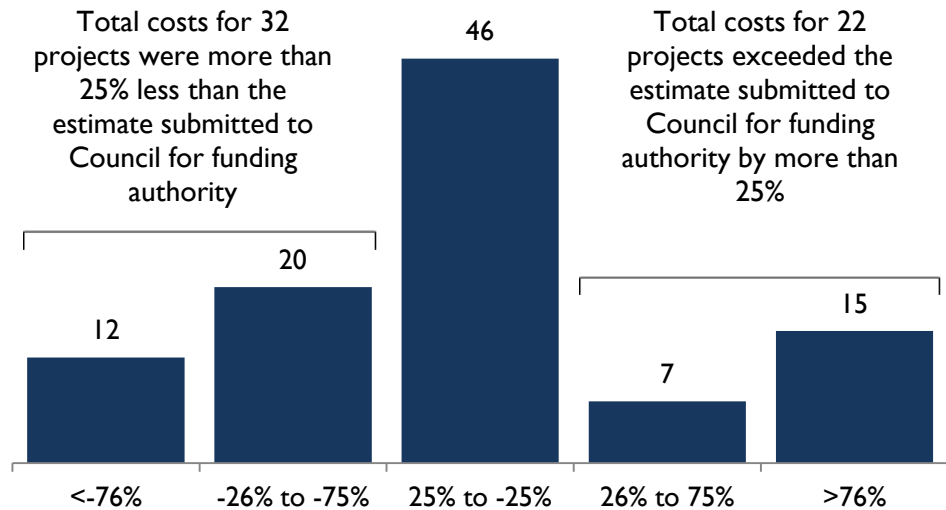
Because KCIT and PSB were not able to provide complete project data, auditors spent a week searching through old meeting minutes for spreadsheets submitted at projects' first funding release request. Of the 252 projects for which we were seeking information, we obtained needed data for 100. We were able to locate basic project cost details for less than 40 percent of IT projects. In some cases project data were absent, in others it was unclear which set of data were current or which was submitted to County Council for appropriation authority.

Even if data had been more available, KCIT and PSB would have difficulties evaluating project spending in an efficient way, because current project data is not organized for this type of analysis, thus all analysis would have to be done manually. In our comparison of initial cost estimates to final project expenditure reports, we found that initial cost estimates were within 25 percent (positive or negative) for fewer than half of the projects for which we were able to obtain data. Additionally, costs increased by more than 75 percent for 15 projects (almost 1 in 7).



# Evaluating the IT Investment

**Exhibit J:**  
**Cost Increased by**  
**More Than 25**  
**Percent for 22 out of**  
**100 Projects**



Source: King County Auditor's Office analysis of project cost/benefit analysis and final project expenditure reports.

PRB staff also indicated that their ability to conduct cross-project analysis is hindered by the lack of sufficient and reliable data for IT projects.

KCIT's CIO identified the need to better manage project data, and KCIT is currently implementing a portfolio management application to track information about IT projects. It is unclear that the application will make complete, accurate IT investment information available to decision-makers especially as it relates to historical project information. Project status reporting, scheduling, and other project activities can be completed within the new system. KCIT noted that project managers may not be required to populate these fields or keep them current. Instead, they would continue to use stand-alone systems for project documentation.

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## Recommendation 9

King County Information Technology (KCIT) should, to the extent possible, ensure that both current and historical project data is accurate and easily accessible. It should be in a format that allows for analysis both within and among projects.

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# Evaluating the IT Investment

## **Incomplete Reporting of Project Benefits Hinders Evaluation and Realization of Project Value**

King County does not effectively estimate, measure, or report benefits from completed IT projects. The lack of consistent benefits realization hinders the ability of decision-makers to make effective funding decisions, determine when changes in benefit estimates necessitate discontinuing a project or, most importantly, evaluate the effectiveness of IT projects.

### **Required benefits realization and close-out analyses are not consistently submitted**

IT projects are projected to save almost \$168 million from 2012 to 2016.<sup>14</sup> While we have raised issues about the estimated savings in terms of tangible versus semi-tangible benefits in this report, this is a significant amount of money and emphasizes the need for an effective process to measure and report the extent to which IT projects realized their estimated benefits.

Expected benefits are one of the primary factors used to decide whether to pursue an IT project. Additionally, industry guidance<sup>15</sup> provides examples of several potential metrics the County could use to measure the extent to which IT projects are demonstrating benefit for the County. They are:

- Percent of IT-enabled investment where benefits realization is monitored through the full economic life cycle,
- Percent of IT-enabled investments where claimed benefits are met or exceeded.

In order to report on these or other similar metrics to demonstrate benefit of IT projects, business owners have to accurately assess and report on actual benefits that result from IT projects.

In 2006, the County Executive proposed and the County Council approved a methodology to identify, validate, capture, and report cost savings results from IT projects.<sup>16</sup> Included in the methodology were a number of requirements, including completion of close-out reports and benefit realization reports for completed projects.

The approved methodology was rarely followed. Based on our analysis of completed projects from April 2006 to April 2012 we found that close-out reports for about half<sup>17</sup> of the completed projects and benefits realization

<sup>14</sup>Based on our analysis of the County Executive's February 2012 cost savings report. Of this total, ABT is scheduled to save more than \$55 million or about one-third of the total savings estimate.

<sup>15</sup>Excerpted from COBIT 5, the latest edition of ISACA's globally accepted IT framework.

<sup>16</sup>"Cost Savings Opportunities from IT Efficiency Projects" approved under motion 12356 on October 10, 2006.

<sup>17</sup>63 projects out of the 123 completed projects from April 2006 to April 2012.

## Evaluating the IT Investment

reports for only 11 percent.<sup>18</sup> While the absence of a benefits realization or close-out report does not necessarily indicate that the project did not achieve intended benefits, without this reporting King County decision-makers cannot know if projects achieve intended goals.

Competing project priorities, staff reassignments, and lack of project ownership by business owners partially explain why these two reports were not often completed. For example, staff from PSB, PRB, and KCIT told us that completion of these reports was not a high priority for the business owner or the project manager. Several officials said this was indicative of a lack of ownership of IT projects countywide in both the executive branch and separately elected agencies that were responsible for this reporting. These officials said that agencies in some cases view IT projects as something KCIT is responsible for and therefore do not feel a responsibility to identify savings or to make the business process changes necessary to realize anticipated savings.

### **PSB has not reduced budgets when IT projects produce savings**

In the County Executive's 2006 "Cost Savings Opportunities from IT Efficiency Projects" report noted above, PSB<sup>19</sup> must evaluate potential cost savings and may adjust agency budgets based on its evaluation<sup>20</sup> in order to ensure that the County captures the value provided by the project. PSB is tasked with reviewing any change requests for reasonableness and is required to review the overall project business case based on any changes to ensure that the value expected from a project is such that the project should proceed.

According to PSB officials, these adjustments have not been made automatically, because reducing agency budgets based on expected savings would create an antagonistic relationship between PSB and the agencies and this would not be conducive to realizing benefits. Additionally, they said that the lack of clarity in business plans as to the quantity and timing of benefits or whether the benefits were tangible cost savings versus semi-tangible benefits made reducing agency budgets very difficult if not impossible. While PSB has not made budget adjustments based on IT project savings, agencies have made some adjustments to its

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<sup>18</sup>12 projects out of the 111 completed projects from April 2006 to April 2011. Close-out reports are required within one month of project completion, while benefits realization reports are required within one year. Twelve of the completed projects we examined were completed between April 2011 and April 2012, thus the difference in project populations.

<sup>19</sup>PSB was previously named Office of Management and Budget, OMB.

<sup>20</sup>Specifically, the report states that if a project is approved with the expectation of cost savings, PSB may create a corresponding budget adjustment for the amount, account, and timing indicated in the project business case. The methodology allows for the updating of the initial cost savings projections over the life of the project.

# Evaluating the IT Investment

own budget requests. For example, Public Health reduced its budget request based on savings from two Jail Health projects.

## **Without critical improvements, the County risks failing to achieve expected benefits from IT projects**

KCIT and PSB recognize existing processes for evaluating and reporting on IT project benefits need improvement. For example, in 2012, for the first time, PSB is requiring projects going through the conceptual review process to have benefits realization plans. This is a positive first step; however, it does not address the issue of compliance with the existing process to capture cost savings from IT projects. Additionally, this requirement focuses on the project approval stage, whereas, our review suggests there also needs to be focus on the project close-out stage. Without more robust efforts to engender participation in benefits realization guidelines, the County may not be able to accurately assess or achieve the value and benefits from IT projects, which in most cases served as the rationale for funding and implementing the projects.

In addition, without consistent reporting on the benefits from projects and applicable budget adjustment actions taken to account for these benefits, decision-makers will not know the extent to which IT projects are realizing the return on investment that may have been the basis for Council approval. Additionally, if benefits are not transparently tracked, there could be an incentive to overestimate the expected benefits of IT projects in order to receive approval for projects in a tight-funding environment. Lastly, the lack of benefits tracking removes incentives for agencies to implement the business process changes necessary to realize benefits from completed IT projects, thus potentially depriving the County of resources that it could apply to other needs and the benefits which justified the IT project.

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### **Recommendation 10**

The Office of Performance Strategy and Budget (PSB) should develop and ensure compliance with a robust set of benefits realization processes that includes effective planning, accurate estimates, and accountability for realizing, evaluating, and reporting IT project benefits. If necessary, this should include a mechanism to make budget adjustments, when applicable, based on expected savings.

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# Evaluating the IT Investment

## County Lacks a System to Collect, Analyze, and Disseminate Lessons Learned from IT Projects

Capturing lessons learned from completed projects and disseminating these lessons to be incorporated in future projects is another step in improving IT investment processes and results. While this process is a best practice for IT investment, we found little evidence that the County effectively collects, evaluates, or disseminates project lessons learned in a consistent or organized manner.<sup>21</sup> KCIT and PSB recognize this issue; however, to date they have not developed an effective strategy to capture or apply lessons learned for IT projects.

In the current IT project management methodology, the step associated with lessons learned has no documentation requirement. While lessons learned are supposed to be captured in the close-out reports project managers prepare within one month of project completion, these reports were completed in only half of projects.<sup>22</sup> Additionally, we did not find a mechanism for the lessons learned to be shared with or integrated into project selection or management processes although some lessons may be shared informally between staff.

Without a formal lessons learned process, the County is at risk of replicating past mistakes and failing to apply hard-won and expensive lessons to current and future IT projects. This is a best practice to capture lessons learned between agencies, and because many IT project managers are term-limited temporary employees who may or may not be able to apply lessons learned to subsequent King County IT projects.

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### Recommendation II

The Office of Performance Strategy and Budget (PSB) and King County Information Technology (KCIT) should develop and implement a plan to ensure that lessons learned are captured and subsequently considered at key points in the project life cycle.

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<sup>21</sup>Both GAO and COBIT 5 identify collecting, evaluating, and disseminating lessons learned an IT investment best practice. U.S. Government Accountability Office. *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, March 2004 and *COBIT 5: Enabling Processes*, 2012

<sup>22</sup>Based on our analysis of the 123 completed IT projects from April 2006 to April 2012 provided by the PRB.

# Total County IT Investment

## Section Summary

The County makes a significant annual investment in technology; however, it is difficult to identify the full cost of IT countywide. IT projects active in 2012 are estimated to cost a total of \$277 million to complete<sup>23</sup> which is one measure. To determine countywide IT costs and highlight trends in IT spending relative to overall county spending we prepared an estimate of IT operational and some project costs. It ranged from \$110 to \$145 million annually over the last five years. The recent KCIT reorganization and changes in KCIT's service model should provide a clear picture of IT costs in the executive branch but total county IT spending should also include offices of the separately elected county officials. Development of county wide IT cost metrics and benchmarking such costs to peers would help track changes in IT costs over time and provide perspective on various IT costs to relevant peer organizations.

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## The County's Investment in IT Is Significant

Evaluating cost-effectiveness of IT investments—whether for projects or operational IT spending—requires knowing what IT costs the County and monitoring IT spending over time. Such procedures are necessary to ensure that policy-makers can confirm that the resources devoted to IT investments countywide are prudent and are an appropriate percentage of county funding given other competing priorities.

While reporting on IT spending is important, tracking King County's IT spending has been problematic, as the decentralized approach to technology staffing and project management prior to 2012 spread IT operational and projects costs across all county agencies including offices of the separately elected officials. Since there has been no central source for information on IT spending, we developed an estimate of technology spending from 2007-2011 to assess how they compared to changes in King County's budget.<sup>24</sup> Further complicating the analysis were difficulties separating out operational from project spending and in capturing countywide IT salary costs. KCIT's recent reorganization will address some of these concerns; however, capturing all IT costs including those from offices of the separately elected could remain a challenge.

Our analysis of estimated information technology spending during the last five years shows different spending patterns depending on whether Accountable Business Transformation (ABT) spending is included or not. During 2007-2011, total expenditures on technology ranged from \$110 to

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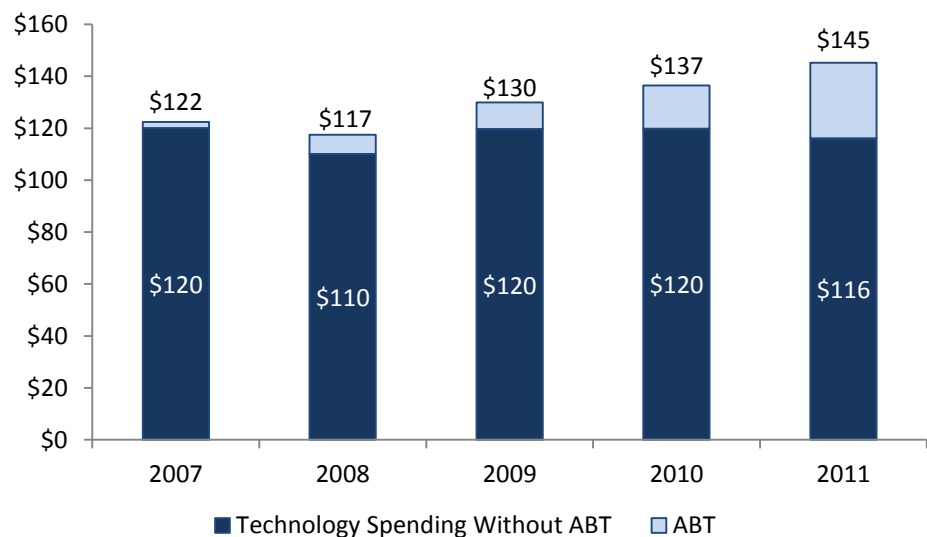
<sup>23</sup>KCIT 2012 Technology Business Plan, Existing Projects, Appendix C, page 5.

<sup>24</sup>We defined information technology spending as expenditures for IT hardware, software, consulting, telecommunication, radios and other miscellaneous IT related equipment and services. This included both IT project spending as well as operational IT expenditures but excluded non-KCIT/OIRM IT salary costs. Since ABT spending represents mainly one time IT project expenditures total technology spending was calculated with and without such spending.

# Total County IT Investment

\$120 million annually without ABT and \$117 to \$145 million annually with ABT.

**Exhibit K: Estimated Total Annual IT Spending Ranged Between \$117 and \$145 Million**



Source: KCAO analysis of ARMS and IBIS technology spending data

To put IT spending in perspective relative to other county priorities and changes in spending, significant county IT spending trends included:

- Technology spending as a percentage of the County's total budget minus debt obligations ranged from 2.4 percent to 3.2 percent during the 2007 to 2011 period without ABT and from 2.6 percent to 3.3 percent when ABT is included. Ideally, comparing total county operating costs to the operational cost of IT is the more realistic comparison for analyzing IT spending trends and measuring IT performance. Since we were unable to isolate IT operational costs and our technology expenditures included some projects costs, we calculated this ratio against total county spending including capital project costs.
- During 2007-2011, we did not find any relationship between changes in IT spending and changes in overall county spending.
- KCIT staffing<sup>25</sup> declined at a higher rate—a 13-percent decline—compared to a 1-percent decline in total county staff during the 5-year period 2007-2011.
- KCIT's departmental spending ranged from \$44 to \$38 million during the five-year period which averaged about 6.5 percent of King County's general fund spending.

<sup>25</sup>Includes years when KCIT was formerly OIRM.



# Total County IT Investment

The County is making progress toward increased clarity on IT spending, largely driven by two factors: the recent executive branch IT reorganization and KCIT's transition to a service-based budgeting model (KCIT Service Catalog).<sup>26</sup> According to KCIT, these two changes will allow it to determine the total cost of IT ownership, something that was not possible without the reorganization and new service catalogue for delivering IT services. While these two factors should make it easier to determine the cost of the various IT services KCIT provides the executive branch, capturing all IT costs will remain problematic as some IT salary and project costs in the offices of the separately elected will not be included in executive branch costs. Further, as mentioned earlier, it would be helpful to have clarity around different kinds of IT costs such as operational, project, and debt service costs. Thus, while some actions underway will provide a clearer picture of the cost of IT services, additional actions remain for the County to develop a complete picture of total IT costs.

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## Recommendation 12

King County Information Technology (KCIT) and the Office of Performance, Strategy and Budget (PSB), working with all county offices and agencies including those of separately elected officials, should annually collect and report information on the total cost of IT broken out by operational, project, and debt service costs.

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## King County Lacks IT Cost Metrics and Peer Benchmarking

Well-managed IT investments that are carefully selected and focused on meeting mission needs can propel an organization forward, improving performance while reducing costs. KCIT currently lacks cost-related IT metrics and would benefit from tracking changes in IT costs over time and benchmarking various IT costs to relevant peer organizations.

KCIT currently uses few cost-related metrics to evaluate how it spends IT resources. Most KCIT performance measures involve concrete, output metrics such as the amount of time the network is accessible, or the length of time responding to help desk requests, among others.

Benchmarking the cost of IT is important for several reasons. Benchmarking can inform decisions about allocation of IT spending among competing county priorities. IT cost metrics can also be used to analyze and track performance, help diagnose problem areas early, and flag areas for improvement. Making decisions about spending levels can

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<sup>26</sup>This KCIT Service Catalog for 2013 describes each end-user service KCIT offers with included service components, target service levels, performance measures for each service, and how the offered service aligns with King County Strategic Plan.



# Total County IT Investment

be challenging, and benchmarking metrics coupled with other performance measures can help make informed decisions.

Other local government IT organizations have developed and applied IT cost metrics. Some measures, if properly modified to fit King County's lines of business and KCIT's service model, that could provide insight to King County include:

- Total IT Expenditures per Computer Workstation;
- Total IT Operating and Maintenance Expenditures as a Percentage of Total Jurisdiction Operating Expenditures; and
- Ratio of Workstations to Total Jurisdiction Employees.

Two examples of organizations that have utilized cost metrics are Sacramento County and ICMA. Sacramento County compared the county's various IT metrics with several peer counties in California.<sup>27</sup> And ICMA Center for Performance Measurement develop a 2010 report on Information Technology which identified a number of IT measures reported by 107 jurisdictions.<sup>28</sup>

KCIT was unable to provide us with data for the number of workstations in 2010 so we could compare it to ICMA IT measures from 2010. In addition, as discussed earlier, such comparisons would be hampered by the way IT expenses were spread throughout various county agencies.

KCIT supports using cost-related IT metrics and has previously conducted peer benchmarking. We recognize the service catalogue approach to providing IT services will provide agencies with greater choice in selecting the amount, type, and cost of IT services. However, this will not negate the benefit of comparing overall IT spending with relevant peers for purposes of assessing trends in IT spending and determining what portion of county spending should be devoted to IT.

Also, such peer comparisons should acknowledge differences between King County and peer organizations that might not have comparable

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<sup>27</sup>"Comparison of Information Technology Spending, Staffing, and Services in Counties Similar to Sacramento County – May 26, 2010," Sacramento County, Office of the Chief Information Officer, accessed April 16, 2012,

[http://www.ocit.saccounty.net/coswcm/groups/public/@wcm/@pub/@ocit/@inter/documents/webcontent/sac\\_024082.pdf](http://www.ocit.saccounty.net/coswcm/groups/public/@wcm/@pub/@ocit/@inter/documents/webcontent/sac_024082.pdf)

<sup>28</sup>The International City/County Management Association (ICMA), *Comparative Performance Measurement - FY 2010 Data Report* (Washington DC: ICMA, 2012, 277-306. The ICMA report acknowledges not all jurisdictions report performance data consistently nor do all reporting jurisdictions provide comparable services. Hence comparative performance information should be interpreted considering these limitations, as we have suggested above.

## Total County IT Investment

business functions such as transit and wastewater treatment. Such factors should be taken into account when making peer comparisons.<sup>29</sup>

Recent IT staff consolidation in KCIT and a 2013 model for calculating IT rates of service should allow KCIT to develop a more accurate and complete picture of county IT spending in the executive branch. However, as mentioned above, including IT costs from separately elected offices is needed for a complete picture of county IT costs. These changes should allow the County to evaluate the cost-effectiveness and trends in overall IT spending, as well as compare the County's IT spending to comparable peers.

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### **Recommendation 13**

King County Information Technology (KCIT) should use the newly developed countywide cost of IT to benchmark IT spending to relevant local government peers. This information should be presented annually to the Council.

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<sup>29</sup>While KCIT benchmarked its performance against other organizations in a 2008 study with InfoTech, we have several reservations about the methodology used, most importantly the lack of transparency in the peer population. Additionally, given the changes mentioned, i.e., the executive branch IT reorganization and the increased clarity the county has for total IT costs, the 2008 study results are no longer applicable.

## Conclusion

In summary, we are encouraged that the County has actions underway to address the issues we raise, specifically the reorganization of the executive branch IT structure, KCIT's transition to a service-based budget model, and PSB's increased emphasis on benefits realization. Addressing these issues will improve results in key countywide strategic priorities such as:

- Increasing citizen access to information and services,
- Achieving business process efficiencies, and
- Ensuring cost savings.

Ultimately, a coordinated and comprehensive effort by PSB and KCIT, with the support of individual agencies, will help move the County towards more strategic IT processes, transparent and independent IT governance, and more rigorous processes for selecting and evaluating IT investments. This will help ensure that every dollar spent on IT provides tangible benefit to the County and the taxpayers.

# Appendix I

## A Framework for Assessing and Improving Process Maturity

Excerpted from: U.S. Government Accountability Office. *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, March 2004.

The ITIM framework is a maturity model composed of five progressive stages of maturity that an agency can achieve in its IT investment management capabilities. These maturity stages are cumulative; that is, in order to attain a higher stage of maturity, the agency must have institutionalized all of the requirements for that stage in addition to those for all of the lower stages. The framework can be used both to assess the maturity of an agency's investment management processes and as a tool for organizational improvement. For each maturity stage, the ITIM describes a set of critical processes that must be in place for the agency to achieve that stage.

At the Stage 1 level of maturity, an agency is selecting investments in an unstructured, ad hoc manner. Project outcomes are unpredictable and successes are not repeatable; the agency is creating awareness of the investment process.

Stage 2 critical processes lay the foundation for sound IT investment processes by helping the agency to attain successful, predictable, and repeatable investment control processes at the project level.

Stage 3 represents a major step forward in maturity, in which the agency moves from project-centric processes to a portfolio approach, evaluating potential investments by how well they support the agency's missions, strategies, and goals.

At Stage 4, an agency uses evaluation techniques to improve its IT investment processes and its investment portfolio. It is able to plan and implement the "de-selection" of obsolete, high-risk, or low-value IT investments.

The most advanced organizations, operating at Stage 5 maturity, benchmark their IT investment processes relative to other "best-in-class" organizations and look for breakthrough information technologies that will enable them to change and improve their business performance.

## Appendix 2

### Code Requirements for IT Governance Bodies

#### **Strategic Advisory Council (SAC)**

The SAC was intended to act in an advisory capacity to the King County Executive in developing long-term strategic objectives and planning and implementing for information technology deployment countywide and identified four specific duties of the SAC.

1. Develop and recommend strategic objectives for information technology deployment countywide;
2. Review information technology proposals for their alignment with adopted strategic objectives;
3. Review and endorse the information technology strategic plan and all updates to it; and
4. Review policy-related transmittals to the County Council that are proposed by the King County Executive for large countywide information technology projects, such as the business cases.

(KCC 2.16.07582)

#### **Business Management Council (BMC)**

The BMC was intended to act in an advisory capacity to the County's chief information officer in carrying out duties related to developing short-term, mid-term and strategic objectives for information technology countywide, in recommending information technology proposals for funding and in developing standards, policies and guidelines for implementation. Seven specific duties of the BMC were identified.

1. Review information technology proposals made by individual members, groups of members or ad hoc committees;
2. Assess short-term, mid-term strategic value and risk of information technology proposals;
3. Assess alignment of information technology proposals with agency business plans, agency technology plans and adopted strategic objectives;
4. Recommend information technology proposals for funding and for inclusion in the technology business plan and the information technology strategic plan;
5. Review and provide recommendations for implementing information technology standards, policies and guidelines;
6. Review and provide recommendations for finalizing the annual technology report and the technology business plan; and
7. Review operations management issues as needed.

(KCC 2.16.07583)

## Appendix 2 (continued)

### Technology Management Board (TMB)

The TMB was intended to act in an advisory capacity to the County's chief information officer on technical issues including policies and standards for information security, applications, infrastructure, and data management. Seven specific duties of the TMB were identified.

1. Review the strategic objectives recommended by the strategic advisory council and assess issues related [to] the ability of the technology infrastructure to support them;
2. Review the business objectives and information technology proposals recommended by the business management council and assess issues related to compliance with the County's technology standards and policies and the impact to the technology infrastructure required to support them;
3. Develop or review information technology program proposals that support the strategic and business objectives of the County;
4. Develop or review technology program proposals that promote the efficient operation and management of technology infrastructure, applications and data;
5. Recommend technology program proposals for funding and for inclusion in the technology business plan and the information technology strategic plan;
6. Review and provide recommendations for finalizing the King County annual technology report and the technology business plan; and
7. Develop or review and recommend standards, policies and guidelines for infrastructure, applications deployment, data management and privacy and security.

(KCC 2.16.07584)

### Project Review Board (PRB)

The PRB acts in an advisory capacity to the CIO in implementing the project management guidelines developed by the central information technology project management. The PRB may also assume the project oversight role assigned to the project management office. The members include the CIO, the assistant county executive operations, the director of the office of performance, strategy and budget and the director of the Department of Executive Services. The CIO acts as chair. Ad hoc project review teams may be convened by the CIO to focus on specific projects. Each ad hoc project review team will include the project's sponsoring agency director. These teams report back findings to the board. Formal votes shall be taken and recorded on all recommendations and meeting minutes shall formally record issues and concerns raised for consideration by the CIO.

(KCC 2.16.07585)

## Executive Response



### King County

**Dow Constantine**

King County Executive  
401 Fifth Avenue, Suite 800  
Seattle, WA 98104-1818

**206-263-9600** Fax 206-296-0194  
TTY Relay: 711  
[www.kingcounty.gov](http://www.kingcounty.gov)

September 6, 2012

Cheryle A. Broom  
County Auditor  
Room 1033  
C O U R T H O U S E

Dear Ms. Broom:

Thank you for the opportunity to review and comment on the proposed final report on the Performance Audit of King County's Investment in Information Technology. The King County Department of Information Technology (KCIT), and the Office of Performance, Strategy and Budget (PSB), have worked collaboratively with your office to support this audit with the expectation that it will lead to improvements in our overall management of technology projects and related processes.

Employee empowerment, product based service delivery enabling customer choice, and focusing on customer service are three primary tenants of my reform agenda. Cultural changes of this magnitude require significant time and effort while deeply impacting people, process, and technology. KCIT is leading the way on several fronts related to these reform agenda objectives. The County's IT project portfolio, therefore, represents the County's investment in both *business* and *technology* efficiency.

In general, my leadership team and I concur with the recommendations of this report. Attached to this letter is our formal response, and for those recommendations where we partially concur, the comments are integral to our response. We look forward to working with your team as we implement the work plan to address the recommendations.

There are four elements of the narrative portion of the report, however, that we do not believe accurately reflects the current condition of KCIT's and PSB's operations, and the accountability and professionalism with which they conduct County business. As a result, we are also providing a written response to the audit report, specifically addressing these items. In brief, those four areas are as follows:

- The audit report uses a federal government model to conclude that the County's "maturity level" in making technology investment decisions is at the lowest possible level. The County has a very comprehensive, formal, structured, and transparent



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and complies with the Americans with Disabilities Act*



## Executive Response (continued)

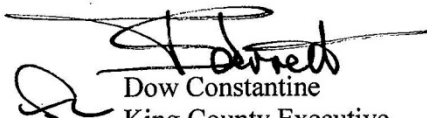
Cheryle A. Broom  
September 6, 2012  
Page 2

process for making such decisions, which has existed and matured over the past 10 years, and we are significantly more mature than is being credited by the audit.

- The County has recently changed project oversight procedures within the Project Review Board to make the process more engaging and more efficient, while also enhancing the focus on at-risk projects. The audit report questions how these changes may impact independent oversight, transparency, and engagement of stakeholders. The transformed oversight process has already proven successful in significantly increasing collaboration, engagement, and accountability of business leaders and stakeholders to promote project success, and has already generated positive results.
- The audit report states that PSB has not decreased department operating budgets when IT projects produce savings. PSB has not made automatic or prospective cuts to budgets based on “estimated” benefits. PSB has in collaboration with departments and agencies made budget adjustments to reflect real efficiencies created through technology.
- There is a comparison of the historical KCIT department budget as a ratio of the County’s general fund. KCIT is not a general fund (“CX”) department, and provides services that are delivered for the benefit of the entire County, residents, and regional partners. Therefore, a better comparison is IT operating costs to total County operating costs.

We look forward to working with the County Council as we continue this effort. If you have any questions, please contact Bill Kehoe, Chief Information Officer, at 206-263-7887, or Dwight Dively, Director, Office of Performance, Strategy and Budget, at 206-263-9687.

Sincerely,



Dow Constantine  
King County Executive

Enclosures

cc: Fred Jarrett, Deputy County Executive, King County Executive Office (KCEO)  
Rhonda Berry, Assistant Deputy County Executive, KCEO  
Dwight Dively, Director, Office of Performance Strategy and Budget  
Bill Kehoe, Chief Information Officer, King County Information Technology  
Caroline McShane, Deputy Director, Finance and Business Operations Division



## Executive Response (continued)

Performance Audit of King County's Investment in Information Technology  
Attachment A –Executive Response to Recommendations

Recommendations	Agency Position	Schedule for Implementation	Comments
<p><b>Recommendation 1</b></p> <p>The Office of Performance, Strategy and Budget (PSB), in consultation with King County Information Technology (KCIT), should further mature the strategic investment framework for formal approval by stakeholders, including the King County Council. PSB and KCIT should then clearly communicate and apply the framework. The strategic investment framework should include:</p> <ul style="list-style-type: none"> <li>a) Roles and responsibilities for guiding resource allocation and ensuring intended results and modified business processes.</li> <li>b) Definition and communication of investment types, categories, criteria and relative weightings to the criteria to document value decisions among projects.</li> <li>c) Clear requirements for stage completion and other reviews.</li> <li>d) Definition of a balanced set of project and portfolio performance objectives, metrics, targets, and benchmarks.</li> <li>e) Alignment with the countywide strategic plan and its goals for delivering value.</li> </ul>	Concur	<p>Implement Portfolio Management Tool by November 1, 2012</p> <p>Incorporate alignment of investments to strategic plan by September 1, 2013</p> <p>Define continued refinement of investment types and evaluation by February 1, 2013</p> <p>Implement balanced performance objects, metrics, targets, benchmarks by June 1, 2013</p>	

## Executive Response (continued)

Performance Audit of King County's Investment in Information Technology  
Attachment A –Executive Response to Recommendations

Recommendations	Agency Position	Schedule for Implementation	Comments
<p><b>Recommendation 2</b> King County Information Technology (KCIT) should increase and document Strategic Advisory Committee, Business Management Council, and Technology Management Board focus on shaping and confirming compliance with King County's technology strategies and objectives in general and for the full technology portfolio as is required by code.</p>	Concur	<p>Identify service options to introduce through BMC and TMB meetings, by December 1, 2012</p> <p>Keep SAC at current level. They are acting at strategic level.</p> <p>Engage the SAC, BMC and TMB for advice on more successful countywide project planning, implementation and deployment, by April 1, 2013</p> <p>Conduct ongoing performance meetings and receive customer and service level adjustments through BMC meetings, to be included in the annual update of the KCIT service catalogue, by May 1, 2013</p>	
<p><b>Recommendation 3</b> King County Information Technology (KCIT), in its role as the PRB, should:</p> <ul style="list-style-type: none"> <li>a) Develop and implement a methodology for ensuring independent oversight of KCIT-led projects; and</li> <li>b) Develop and implement a plan to increase stakeholder involvement and PRB transparency.</li> </ul>	Concur	<p>Complete the implementation of PRB risk-based project oversight and associated checks and balances by October 1, 2012</p> <p>Develop plan for stakeholder involvement and transparency by January 1, 2013</p> <p>Establish criteria and guidelines for Quality Assurance / Independent Verification and Validation of KCIT projects by February 1, 2013</p>	

## Executive Response (continued)

Performance Audit of King County's Investment in Information Technology  
Attachment A –Executive Response to Recommendations

Recommendations	Agency Position	Schedule for Implementation	Comments
<p><b>Recommendation 4</b></p> <p>The Office of Performance, Strategy and Budget (PSB) should utilize a set of consistent and transparent criteria and a scoring system to evaluate potential projects at conceptual review. This criteria and scoring system should be linked to the strategic investment framework. Additionally, PSB should employ a system to score, rank, and prioritize projects within a funding category for inclusion in the budget.</p>	<p>Partially Concur</p>	<p>Criteria established by June 1, 2013</p>	<p>There is clear evidence that IT industry best practices for selecting technology investments involve qualitative analysis that considers non-traditional valuation without producing ordinal scoring. Therefore, this effort will focus on creating criteria that will be transparent, and will balance costs, benefits, risks, and strategic alignment.</p>
<p><b>Recommendation 5</b></p> <p>The Office of Performance, Strategy and Budget (PSB) should ensure that business cases are complete, clear, and contain the most accurate data available at the time of submittal. Business cases should clearly state the level of confidence in the information presented and include a timeframe estimate when more complete information will be available as the project matures. In addition, PSB should ensure rigorous completion of the five elements of business cases noted above including ensuring that departments fully state and explain the assumptions used in the business cases.</p>	<p>Concur</p>	<p>Modification to the business case to include criteria and enforce compliance by May 1, 2013</p>	

## Executive Response (continued)

Performance Audit of King County's Investment in Information Technology  
Attachment A –Executive Response to Recommendations

Recommendations	Agency Position	Schedule for Implementation	Comments
<p><b>Recommendation 6</b> The Office of Performance, Strategy and Budget (PSB) should update its template to correct the net present value calculation, correct missing formulas, consistently account for inflation, and account for full project lifecycle in time for the 2013 conceptual review sessions. In addition, prior to submitting to County Council, PSB should ensure that the cost/benefit worksheet includes the most accurate data available at the time of submittal, including clear communication of the level of confidence in the information presented and an estimate the timeframe when information would become more precise.</p>	Concur	Corrections to the templates by January 1, 2013	
<p><b>Recommendation 7</b> The Office of Performance, Strategy and Budget (PSB) in consultation with King County Information Technology (KCIT) should develop a process to reevaluate information technology projects if project costs, benefits, or schedules change beyond estimated percentages. This process should include a reporting schedule for reporting to the Council.</p>	Concur	<p>Develop the criteria and process for reevaluating projects based on scope, schedule, budget changes, by May 1, 2013</p> <p>Conduct countywide project manager training for project budget, benefits and schedule modification by May 1, 2013</p> <p>Determine the proper reporting venue (Annual Technology Report or Technology Business Plan) for reporting actions to Council by June 1, 2013</p>	



## Executive Response (continued)

Performance Audit of King County's Investment in Information Technology  
Attachment A –Executive Response to Recommendations

Recommendations	Agency Position	Schedule for Implementation	Comments
<p><b>Recommendation 8</b> The Office of Performance, Strategy and Budget (PSB) should develop definitions to distinguish between the various types of savings from IT projects and consistently use these definitions in reports to the County Council and other decision-makers. PSB should provide instructions and examples to illustrate the differences between these savings definitions which departments can use when completing the cost/benefit analysis template.</p>	Concur	Modification to the business case to include clear differentiation of benefit types by May 1, 2013	
<p><b>Recommendation 9</b> King County Information Technology (KCIT) should, to the extent possible, ensure that both current and historical project data is accurate and easily accessible. It should be in a format that allows for analysis both within and among projects.</p>	Partially Concur	To be included in the Portfolio Management Tool by June 1, 2013	The PRB will work with project managers and business sponsors countywide to promote accurate project data reporting, but KCIT has limited authority to fully enforce such a system outside the Executive Branch.
<p><b>Recommendation 10</b> The Office of Performance, Strategy and Budget (PSB) should develop and ensure compliance with a robust set of benefits realization processes that includes effective planning, accurate estimates, and accountability for realizing, evaluating, and reporting IT project benefits. If necessary, this should include a mechanism to make budget adjustments, when applicable, based on</p>	Partially Concur	Refined process for benefit realization, including project activities and reports and formal assessment of results, by September 1, 2013	PSB agrees with implementing an approach to realizing benefits. However, adjustments should be made on realized – not expected – savings, while also holding agencies accountable for striving to realized the expected savings.

## Executive Response (continued)

### Performance Audit of King County's Investment in Information Technology Attachment A –Executive Response to Recommendations

Recommendations	Agency Position	Schedule for Implementation	Comments
<p>expected savings.</p> <p><b>Recommendation 11</b> The Office of Performance, Strategy and Budget (PSB) and King County Information Technology (KCIT) should develop and implement a plan to ensure that lessons learned are captured and consulted at key points in the project lifecycle.</p>	Partially Concur	Assessment of the level of effort, methods, costs, and budget/staff additions for compliance, by July 1, 2013	Full implementation of this recommendation requires staffing support to realize. The county will need to assess this recommendation in the context of future budget and staffing priorities.
<p><b>Recommendation 12</b> King County Information Technology (KCIT) and the Office of Performance, Strategy and Budget (PSB), working with all county offices and agencies including those of separately elected officials, should annually collect and report information on the total cost of IT broken out by operational, project, and debt service costs.</p>	Partially Concur	To the extent possible, information available by September 1, 2013	Both KCIT and PSB agree with the recommendation for the Executive Branch. However, due to budget structures and IT organization models, there is limited ability to define an IT TCO outside the Executive Branch.
<p><b>Recommendation 13</b> King County Information Technology (KCIT) should use the newly developed countywide cost of IT to benchmark IT spending to relevant local government peers. This information should be presented annually to the Council.</p>	Partially Concur	Develop Total Cost of Ownership models, benchmark against appropriate models, and delivery to Council as part of the appropriate report (Technology Business Plan or Annual Technology Report) in 2013	Given the progressive service model adopted by KCIT, benchmarking should compare performance with similar IT industry/market standards, and not against local governments.

## **Auditor's Comments on Executive's Response**

We appreciate the County Executive's support for the majority of our recommendations. Implementation of all the recommendations in this performance audit is important to ensure that the County's investment in information technology results in the greatest value for the County. We will first address comments made in the Executive's transmittal letter, then address where the Executive has indicated partial concurrence with the report's recommendations.

### **IT Investment Maturity:**

We evaluate the maturity of the County's information technology investment using a model developed by the Government Accountability Office for government use. The Executive's letter notes that, "we are significantly more mature than is being credited by the audit." We acknowledge progress made by the County over the past years related to the IT investment and support planned efforts. Neither PSB nor KCIT was able to provide evidence of meeting maturity criteria higher than level one. The Auditor's Office takes special care to ensure that our statements are based on clear and demonstrated evidence. Because of the sensitivity of this evaluation, we conducted multiple additional crosschecks and quality assurance of the maturity assessment, all reaching the same conclusion: that the County is currently at level one of the assessment model. We look forward to further gains in King County IT investment maturity in the near future.

### **PRB Transparency and Independence:**

We evaluate the updated structure of the Project Review Board (PRB). The Executive notes that, "The transformed process has already proven successful in increasing collaboration, engagement, and accountability of business leaders and stakeholders to promote project success, and has already generated positive results." During our review, we heard many positive comments from project managers and others about the changes in PRB structure and acknowledge this in our report. Despite this, two concerns remain. First, although progress has recently occurred, there are further gaps in the transparency of decision-making and information sharing. Second, the new structure of the PRB put KCIT in the role of overseeing its own projects, violating basic tenets of internal controls and increasing the risk of subjective oversight of KCIT projects. The Executive concurs with the recommendation that will resolve these two concerns.

### **Benefits Realization:**

We evaluate the extent to which PSB decreased department operating budgets based on anticipated benefits as required in the Executive's 2006 Cost Savings Opportunities from IT Efficiency Projects methodology. The Executive notes that, "PSB has not made automatic or prospective cuts to budgets based on 'estimated benefits.'" We agree with this statement as we found no evidence such actions were taken as required by the Executive's cost savings methodology. In addition, we acknowledge in our report that in some cases operating budgets were decreased based on the results of IT projects. We are not recommending that anticipated savings must be the basis of budget adjustments; however, such



## Auditor's Comments on Executive's Response (continued)

adjustments should be a possibility to ensure accountability and compliance with the benefit realization process PSB adopts.

### **KCIT Department Budget:**

We evaluated how KCIT's budget during 2007-2011 compares to the General Fund to assess changes in discretionary spending relative to IT operational spending. The Executive notes a better comparison would be to total County operational spending. KCIT has also previously acknowledged that, due to the county's organization and budget structure, it was difficult in the past to identify true IT operational spending. We agree that several factors precluded developing an exact historical measure of IT operational spending. KCIT's recent reorganization and new service catalogue for IT services should help develop an accurate cost of IT operational spending.

### **Recommendation 4:**

We recommend that PSB use consistent and transparent scoring and prioritization systems based on an approved strategic framework to evaluate potential projects. The Executive partially concurs, indicating that such a scoring system should consider other factors. We acknowledge this in the text of our report, where we write, "While exceptions to such a model may be necessary in situations where a project must be implemented to replace obsolete equipment or to mitigate a security risk, in general, the model should be used to determine which projects to pursue." We agree with the Executive that there are cases in which the County must pursue specific IT projects regardless of how well it scores. In addition, PSB is free to include whichever factors it sees fit to evaluate and prioritize potential projects. We have provided PSB sufficient flexibility in implementing this recommendation to address the concerns raised.

### **Recommendation 9:**

We recommend that KCIT should ensure to the extent possible that accurate and easily accessible project data should be available. The Executive partially concurs, indicating that while it agrees current and historical project data should be accurate and easily accessible, it cannot control the separately elected agencies, thus cannot ensure full implementation of the recommendation. We acknowledge this in the text of our recommendation, with the inclusion of the language, "to the extent possible." We recognize that although the Executive can, and should, encourage complete and transparent data from elected officials, they may not be able to require the provision of that data given the current process. We have provided PSB sufficient flexibility to address the concerns raised.

### **Recommendation 10:**

We recommend that PSB implement a set of benefits realization processes and if necessary, include a mechanism to make budget adjustments. The Executive partially concurs but indicates that benefits realization measurement and reporting should be based on realized, not just expected benefits. We agree that realized benefits should be measured and reported; however, it is important to evaluate *realized* benefits in relation to the *expected* benefits, which in many cases, serve as the rationale for

## Auditor's Comments on Executive's Response (continued)

funding and implementing an IT project. This comparison encourages and facilitates more accurate estimation of benefits for potential projects.

### **Recommendation 11:**

We recommend that PSB and KCIT implement lessons learned processes at key points in the project life cycle. The Executive partially concurs but indicates that implementing this recommendation would require additional staff. We agree that collecting and considering lessons learned could require resources, and the extent of this would be based on the Executive's approach to implementation. Our intent is to avoid repeating mistakes when implementing IT projects.

### **Recommendation 12:**

We recommend that PSB and KCIT, with the support of all county agencies, should annually report the total cost of IT. The Executive partially concurs indicating agreement that the total cost of IT is a useful piece of information but said that it cannot control the separately elected agencies and thus cannot ensure the recommendation is fully implemented. We recognize PSB and KCIT have no direct authority over the offices of the separately elected. However, we expect that PSB and KCIT will make an earnest effort to work with those offices, to the extent practicable, to gather the information necessary to report on the total cost of IT countywide.

### **Recommendation 13:**

We recommend that KCIT should benchmark IT spending to relevant local government peers. The Executive partially concurs, agreeing to benchmark performance and costs; however, the Executive indicates that it would not compare itself to other local governments because of its "progressive service model." While we applaud KCIT's consolidation and its implementation of service-based budgeting several times in our report and indicate that we think these actions may address some of our findings, as a local government entity, King County has peers among other local governments. Therefore, it is useful to start any benchmarking effort by comparing itself against peer governments. If during or after this effort, it is apparent to the Executive that peer governments are not comparable or do not provide useful examples of how technology investment could be improved, then other non-governmental peers could be identified.

## **Statement of Compliance, Scope, Objectives & Methodology**

### **Statement of Compliance with Government Auditing Standards**

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

### **Audit Scope and Objectives**

The objectives for the performance audit of King County's Department of Information Technology (KCIT) were to determine:

1. To what extent do King County's Information Technology (IT) projects and initiatives optimize county resources and leverage results?
2. To what extent are King County's approach to and management of IT projects and initiatives transparent, accountable, and consistent with best practices?
3. What challenges does King County face in overseeing and managing IT projects and initiatives and realizing the project benefits?

### **Methodology**

To achieve the objectives noted above, the King County Auditor's Office interviewed KCIT leadership, management and staff; interviewed Performance Strategy and Budget (PSB) leadership and staff who review IT projects; interviewed council central staff IT analysts; and interviewed IT staff in a number of executive departments and offices of King County elected officials. We also performed analyses of KCIT and PSB data and documentation on various IT projects and processes and surveyed relevant IT literature and best practices.

### **Scope of Work on Internal Controls**

We assessed internal controls relevant to the audit objectives. This included review of selected policies, plans, processes, and reports. In many areas of this audit, we relied on computer generated data. We tested the reliability of the data using a variety of techniques depending on the data and our purposes. We determined that the data used was sufficiently reliable for our intended purposes.

## List of Recommendations & Implementation Schedule

**Recommendation 1:** The Office of Performance Strategy and Budget (PSB), in consultation with King County Information Technology (KCIT), should further develop a strategic investment framework for formal approval by stakeholders, including the King County Council. PSB and KCIT should then clearly communicate and apply the framework. The strategic investment framework should include:

- a) Roles and responsibilities for guiding resource allocation and ensuring intended results and modified business processes.
- b) Definition and communication of investment types, categories, criteria and relative weightings to the criteria to allow value decisions among projects.
- c) Clear requirements for stage completion and other reviews.
- d) Definition of a balanced set of project and portfolio performance objectives, metrics, targets, and benchmarks.
- e) Alignment with the countywide strategic plan and its goals for delivering value.

**Implementation Date:** Q1 2013

**Estimate of Impact:** IT project selection processes would drive achievement of countywide strategic goals and help deliver anticipated project value. Processes would be predictable, repeatable and leverage project success. Roles and responsibilities throughout the IT project selection process would be defined and due-diligence analysis enhanced.

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**Recommendation 2:** King County Information Technology (KCIT) should increase and document Strategic Advisory Committee, Business Management Council, and Technology Management Board focus on shaping and confirming compliance with King County's technology strategies and objectives in general and for the full technology portfolio as is required by code.

**Implementation Date:** Q2 2013

**Estimate of Impact:** Input into King County strategic direction will take full advantage of leadership, business, and technical resources. Resource optimization and risk tolerance will be driven from the appropriate levels of authority. Compliance with code requirements related to IT governance will be achieved. IT project selection will be treated as a portfolio, helping to achieve broad, countywide goals rather than narrow, project-focused goals.

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**Recommendation 3:** King County Information Technology (KCIT), in its role as the Project Review Board (PRB), should:

- a) Develop and implement a methodology for ensuring independent oversight of KCIT-led projects; and
- b) Develop and implement a plan to increase stakeholder involvement and PRB transparency.

**Implementation Date:** Q1 2013

**Estimate of Impact:** Decrease risks associated with a single entity both implementing and overseeing projects. Broader stakeholder involvement will provide a richer foundation of

## List of Recommendations & Implementation Schedule (continued)

information to oversee projects. In addition, stakeholders outside of the PRB will be fully informed.

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**Recommendation 4:** The Office of Performance Strategy and Budget (PSB) should utilize a set of consistent and transparent criteria and a scoring system to evaluate potential projects at conceptual review. This criteria and scoring system should be linked to the strategic investment framework. Additionally, PSB should employ a system to score, rank, and prioritize projects within a funding category for inclusion in the budget.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Improve the likelihood that IT projects will support county strategic goals. An improved process will be consistent, repeatable, transparent, and reflect county priorities. Ultimately, projects selected for funding are more likely to succeed.

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**Recommendation 5:** The Office of Performance Strategy and Budget (PSB) should ensure that business cases are complete, clear, and contain the most accurate data available at the time of submittal. Business cases should state the level of confidence in the information presented and include a timeframe estimate when more complete information will be available as the project matures. In addition, PSB should ensure rigorous completion of the five elements of business cases noted above including ensuring that agencies fully state and explain the assumptions used in the business cases.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Increase the quality of information provided to the King County Council for funding decisions. In cases where information is preliminary, implementing this recommendation will provide Council with an indication of the quality of the estimates and when to expect information that is more accurate. Ultimately, projects selected for funding are more likely to succeed, and that could potentially reduce costs and staff effort.

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**Recommendation 6:** The Office of Performance Strategy and Budget (PSB) should update its template to correct the net present value calculation, correct missing formulas, consistently account for inflation, and account for full project life cycle in time for the 2013 conceptual review sessions. In addition, prior to submitting to County Council, PSB should ensure that the cost/benefit worksheet includes the most accurate data available at the time of submittal, including communication of the level of confidence in the information presented and an estimate of the timeframe when information will become more precise.

**Implementation Date:** Q1 2013

**Estimate of Impact:** Correcting the current template will improve the quality of the cost and benefit information KCIT, PSB, agencies, and Council use to make IT project decisions. Correcting these estimates will result in improved decision-making as projects can be evaluated based on more accurate cost and benefit estimates. Ultimately, projects selected for funding are more likely to succeed, and that could potentially reduce costs and staff efforts.

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## List of Recommendations & Implementation Schedule (continued)

**Recommendation 7:** The Office of Performance Strategy and Budget (PSB) in consultation with King County Information Technology (KCIT) should develop a process to reevaluate information technology projects if project costs, benefits, or schedules change beyond estimated percentages. This process should include a schedule for reporting to the Council.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Decrease the risk that the county will fund and implement IT projects if costs no longer justify benefits based on more accurate estimates. This could ultimately reduce costs and staff efforts when revised estimates indicate the project may not produce expected benefits.

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**Recommendation 8:** The Office of Performance Strategy and Budget (PSB) should develop definitions to distinguish between the various types of savings from IT projects and consistently use these definitions in reports to County Council and other decision-makers. PSB should provide instructions and examples to illustrate the differences between these savings definitions, which agencies can use when completing the cost/benefit analysis template.

**Implementation Date:** Q2 2013

**Estimate of Impact:** Provide additional information that decision-makers can use to evaluate potential projects and increase clarity of benefits and savings estimates.

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**Recommendation 9:** King County Information Technology (KCIT) should, to the extent possible, ensure that both current and historical project data is accurate and easily accessible. It should be in a format that allows for analysis both within and among projects.

**Implementation Date:** Q2 2013

**Estimate of Impact:** Increase the ability of PSB and KCIT to conduct cross-project analysis to determine underlying or systematic issues with project execution. Ultimately, this will assist the county in enhancing future project successes and potentially reducing costs and staff effort.

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**Recommendation 10:** The Office of Performance Strategy and Budget (PSB) should develop and ensure compliance with a robust set of benefits realization processes that includes effective planning, accurate estimates, and accountability for realizing, evaluating, and reporting IT project benefits. If necessary, this should include a mechanism to make budget adjustments, when applicable, based on expected savings.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Increase accountability for achieving the benefits, which in many cases are the primary rationale for implementing projects. This could increase the realization of benefits, such as efficiencies, cost savings, and other benefits.

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## List of Recommendations & Implementation Schedule (continued)

**Recommendation 11:** The Office of Performance Strategy and Budget (PSB) and King County Information Technology (KCIT) should develop and implement a plan to ensure that lessons learned are captured and subsequently considered at key points in the project life cycle.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Provide the county an opportunity to catalog lessons from completed projects and leverage these lessons to avoid or mitigate future risks and issues, resulting in improved likelihood of project success.

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**Recommendation 12:** King County Information Technology (KCIT) and the Office of Performance, Strategy and Budget (PSB), working with all county offices and agencies including those of separately elected officials, should annually collect and report information on the total cost of IT broken out by operational, project, and debt service costs.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Provide information on total IT spending across the county. This is a necessary first step to determining value of IT spending and identifying effective ways to get the most benefit from IT spending.

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**Recommendation 13:** King County Information Technology (KCIT) should use the newly developed countywide cost of IT to benchmark IT spending to relevant local government peers. This information should be presented annually to the Council.

**Implementation Date:** Q3 2013

**Estimate of Impact:** Provide understanding as to how King County performs in relation to its peers and identify areas where improvements can be made.